

ABSTRACT FORM

Proposal for poster presentation

Do aphids and their predators use the same OBP to transport a same odour?

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Insect odorant-binding proteins (OBPs) are small, water-soluble molecules that are thought to transport the hydrophobic odorants to their receptors in the chemosensory neurones. In aphids, several OBPs were cloned from *Acythosphihon pisum*. In particular the recombinant protein named “OBP3” exhibited remarkably binding affinities with the major component of the aphid alarm pheromone (E-beta-farnesene or EBF). Although similarity between OBPs of the same aphid specie is poor, there is a high level of conservation between OBP of the same type.

As aphid predators such as hoverflies and ladybirds also use EBF to locate their prey, we investigated the presence/absence of an OBP3 in the hoverfly *Episyrphus Balteatus* and the ladybird *Harmonia axyridis*.

A standard PCR cloning strategy was used to isolate the cDNAs of OBP3 from *Episyrphus Balteatus* and *Harmonia axyridis*. Identification of the deduced amino acid sequences as OBP was confirmed by BLASTP analysis. The predicted translated products have typical 6-cysteines signature of OBPs. Surprisingly, A comparison of these sequences with these of aphid OBP3 revealed a high percentage of identity around 98%. These results suggest that aphids and their predators use the same OBP to transport a same odour such as EBF. As OBP3 was found in female's hoverflies as well in cDNA from males, we are currently investigating by qRT-PCR the expression level of OBP3 genes according to sex and age.